

**DIVERTER VALVE FOR A SANITARY
FITTING WITH A BIASED SPINDLE, A
CONCEALED INSTALLATION BODY WITH
SUCH A DIVERTER VALVE AND A METHOD
FOR MOUNTING A CONCEALED
INSTALLATION BODY**

[0001] This nonprovisional application claims priority under 35 U.S.C. § 119(a) to German Patent Application No. 10 2018 120 204.0, which was filed in Germany on Aug. 20, 2018, and which is herein incorporated by reference.

BACKGROUND OF THE INVENTION

Field of the Invention

[0002] The present invention relates to a diverter valve for a sanitary fitting, a concealed installation body for a sanitary fitting and a method for mounting a concealed installation body.

Description of the Background Art

[0003] Diverter valves serve to divert a flow of fluid between a plurality of fluid discharge points, such as overhead shower heads and hand-held shower heads of a shower and are often part of a concealed installation body. Concealed installation bodies can be mounted within a wall opening, in a cavity in a wall or another type of support. In particular, in built-in walls and pre-wall systems such concealed installation bodies have proven to be successful.

[0004] Concealed installation bodies serve to mount a functional unit in a stone wall, wall or another type of support. The functional unit may comprise a mixer, such as a thermostat cartridge, and/or a valve. By means of the mixer, a cold water and a hot water are miscible to a mixed water having a desired mixed water temperature, wherein a discharge amount of the mixed water is controllable by means of the mixer or the valve. At least one mixed water line can be connected to the concealed installation body, via which the mixed water, such as of a hand-held shower head, an overhead shower head, nozzle, spout and/or the like in a shower and/or bath can be fed to the sanitary fitting. The cold water connection is generally connected with a cold water house connection and the hot water connection is generally connected with a hot water house connection via appropriate piping.

[0005] Due to different mounting depths of the concealed installation body in the stone wall, wall or support, it is possible for control knobs, push buttons or rotary knobs, which operate the diverter valve of the concealed installation body, to protrude from the wall to different extents. As a result, a uniform appearance of the control knobs, push buttons or rotary knobs cannot be ensured once the concealed installation body has been mounted in the wall. In addition, with a non-exact installation of the concealed installation body, stop forces or bending moments can be induced by the control knobs, push buttons or rotary knobs on the diverter valve. This makes it possible for gaps to appear between the control knobs, push buttons or rotary knobs and a covering or decorative panel of the concealed installation body, which affects the appearance.

SUMMARY OF THE INVENTION

[0006] It is therefore an object of the invention is to at least partially solve the problems described with reference to the

conventional art, and in particular to provide a diverter valve and a concealed installation body for a sanitary fitting with which a uniform outer appearance can be ensured. In addition, a method is to be specified for mounting a concealed installation body with which a uniform outer appearance can be ensured.

[0007] A diverter valve for a sanitary fitting in an exemplary embodiment can include a diverter valve housing; a valve body for the targeted supply of a fluid to at least two diverter valve outlets; and a spindle for actuating the valve body, wherein the spindle is biased, so that after cutting the spindle to length, the spindle is displaced from the diverter valve housing by a defined travel.

[0008] The diverter valve is used in, for example, sanitary fittings, which are used in connection with showers and/or bathtubs. The sanitary fittings may in particular be water inlets, hand-held shower heads, overhead shower heads, nozzles and/or the like. Such diverter valves are used in particular to divert a fluid flow between a plurality or multiplicity of fluid discharge points or sanitary fittings. The diverter valve may be, for example, a two-way diverter valve, by means of which a fluid can selectively be supplied to a first fluid discharge point or to a second fluid discharge point. For this purpose, the diverter valve has a diverter valve housing, which may be formed, for example, in the manner of a head piece. The diverter valve housing may also be designed such that it can be fastened to a concealed installation body or screwed into a concealed installation body. The diverter valve can be supplied with a fluid via a diverter valve inlet, which can be formed in the diverter valve housing. The diverter valve also has a valve body for the targeted supply of fluid to at least two diverter valve outlets. The valve body is, for example, displaceable in a diverter valve inlet chamber of the diverter valve between a first valve seat of a first diverter valve outlet and a second valve seat of a second diverter valve outlet, in particular by means of a translatory movement. When the valve body is moved against the first valve seat, the first diverter valve outlet is closed so that no fluid can flow through the first circulation valve outlet. The second circulation valve outlet is opened in this position of the valve body so that the fluid can flow through the second circulation valve outlet. If the valve body is moved against the second valve seat, the second diverter valve outlet is closed, so that no fluid can flow through the second circulation valve outlet. The first circulation valve outlet is opened in this position of the valve body, so that the fluid can flow off via the first circulation valve outlet. The first valve seat and/or the second valve seat may be formed on the diverter valve housing and/or on a component of a concealed installation body.

[0009] The valve body is mounted on a spindle and is actuated via the spindle. The spindle extends at least partially through the diverter valve housing and is guided by the diverter valve housing, in particular in parallel with its longitudinal axis. During operation of the diverter valve in the diverter valve housing, the spindle is displaceable to a limited extent, in particular by tension and/or pressure, for purposes of moving the valve body between the first valve seat and the second valve seat. Prior to assembly of the diverter valve, the spindle is biased so that after cutting the spindle, said spindle is displaced from the diverter valve housing by a defined travel. This means in particular that the spindle is acted upon by a force which presses the spindle in particular in a longitudinal direction, i.e., in parallel with the